Obstacles of FinTech in Egyptian Bank Sector under Social Distancing

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Abstract

The study investigates the obstacles of FinTech in banking sector in Public and Private Banks. The population of the study is Egyptian bankers. Accordingly, the number of conducted questionnaires was 395 (8 Egyptian banks) in the first half of 2020. There is a difference in acceptance of FinTech between public and private banks. Finally, Obstacles FinTech in Egyptian bank sector includes both (1) "RegTech: FinTech face a complex regulatory environment that was designed for older business models and is slow to adopt change". (2) "bank unit characteristics: Usually, private banks are more flexible in applying FinTech services, compared to public banks; Egyptian Clients Attitude, orientation towards using FinTech application is positive with reservation on the nature of each governorate, Cairo and Nile delta, Giza and Alexandria represent big weight for using such FinTech apps compared to Upper Egypt. Technological Infrastructure, it is still weak especially in public banks compared to private banks." and (3) "Staff characteristics: the young staff, has a high rate of income and segment who holds high level degrees or certificates from staff was supporting FinTech".

Keywords:

FinTech, Financial Technology, RegTech, Egyptian Bank.

Introduction:

FinTech refers to solutions technology enabled financial services for markets & institutions. Finance and technology interconnections, The FinTech Industry is the integration of financial services and technology applications, by creating value to society by minimizing costs and time as well as maximizing opportunities.

However, it has a lengthy history and has developed over three separate eras. The first era of financial globalization, backed by technological infrastructure such as transatlantic transmission wires, was FinTech 1.0, from 1866 to 1987. From 1987-2008, FinTech 2.0 followed this, during which financial services companies were digitizing their processes progressively. In both the advanced and emerging countries, a fresh age of FinTech has appeared since 2008.This contemporary development of FinTech, led by start-ups, presents difficulties for regulators and market participants alike, especially in balancing future innovation advantages with potential new approach hazards. (Arner at el.,2015).

On the other hand; Consumer price index play a vital role in such technology, as we have seen that demand pattern increases with the increasing and recurrent and simplified FinTech apps to go on, which may lead to over inflation as a result of more facilitated transactions by such FinTech apps.

Theoretical framework, literature review and hypotheses formulation:

Since the end of last year, this started in China and then the rest of the countries; under the ongoing COVID-19, the humans are experiencing a disruptive period like no other to date. Traditional financial institutions like banks and similar physical locations are almost completely prohibited today and vis-à-vis activities are confined to online stages. However, in a world where FinTech was already making a great impact, its potential and demand has increased tremendously since the start of the global Coronavirus outbreak. Could this be making a push to FinTech at bank units? (Zachariadis et al.,2020). According to Fu and Mishra (2020) the spread of COVID-19 and related government lockdowns have led to more than 24% increase in the relative rate of daily downloads of finance mobile applications in 74 countries. Therefore, the scope of non-human services was of interest to many business areas, such as FinTech services in banks.

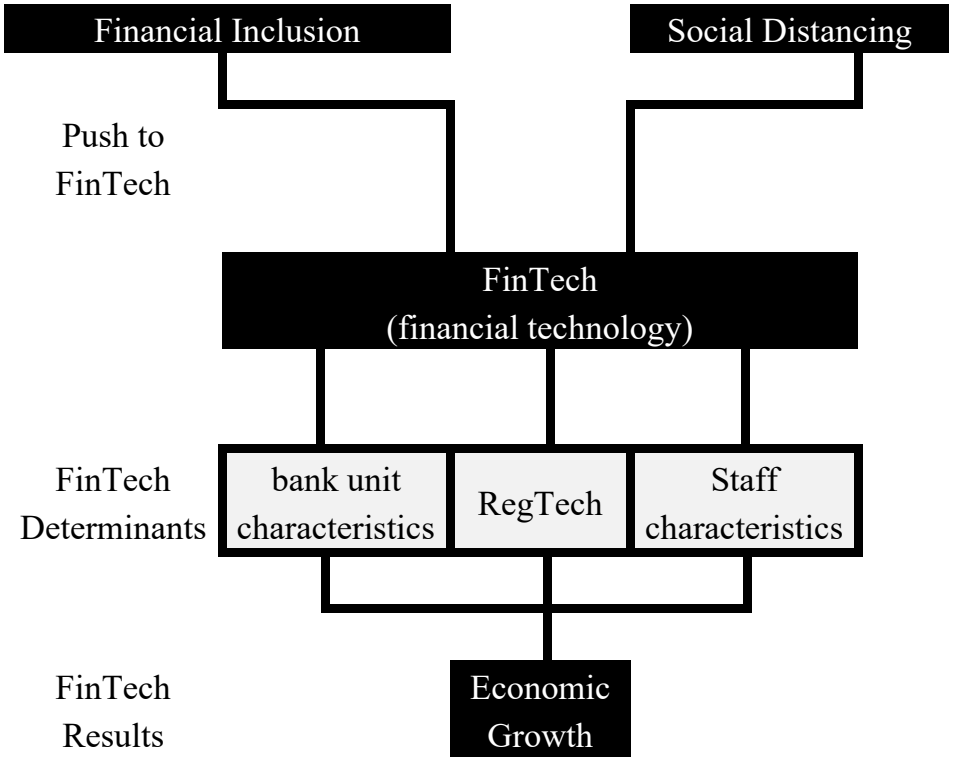
FinTech is steps to undertake to develop a comprehensive strategy to support digital financial transformation, underpinning both financial inclusion and sustainable economic growth (Zetzsche et. al.,2019) FinTech Industry includes financial services developed by banks, insurance, non-bank, non-insurance and online firms & added many new terms such as BankTech, CoinTech and RegTech. FinTech provides a range of financial services with additional means of access. So FinTech clients have already become banking & non-

banking institutions. (Arner et al. 2016; Schwab and Guibaud, 2016; Schizas et. al., 2019; Buckley et al., 2020).

Now the study has a question about the chances of success of the new technology. According to (Clegg et. al., 1997) that 80–90% of information Technology applications programs in business units don't improve a performance this business units; but according to (Rezvanian et al., 2008) the types of ownership for bank units have an impact on technological progress and productivity growth for banks units; **Based on the above arguments, this study's test following two hypotheses:**

- **There isn't a significant difference in the attitudes of bankers about acceptance of FinTech between public and private banks.**
- **There isn't a significant difference in the attitudes of bankers about characteristics of bank unit on the provision of FinTech services between public and private banks.**

The study provides a framework (Figure 1) for obstacles FinTech in Egyptian bank sector that constitutes three groups of factors. The first: bank unit characteristics. The second: Staff characteristics. The third: RegTech. This study believes there is a push to FinTech from two factor; this are Financial Inclusion (under Egypt vision 2030) addition to social distancing (under COVID-19); the study agrees with Zetzsche et. al., (2019) that financial inclusion through FinTech making an economic growth.



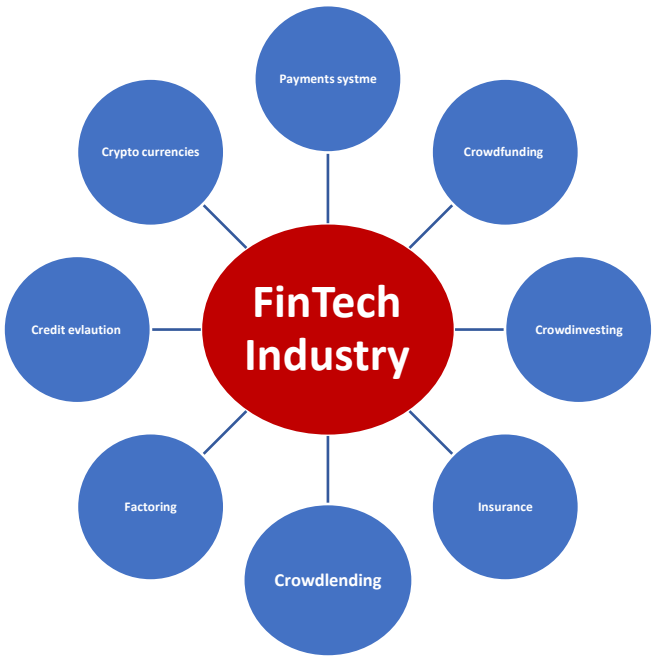
Source: Author

Figure (1): Study layout

According to Meager (2017); RegTech and cybersecurity was obstacles to FinTech at EU regulations that is agree with Treleaven (2015), Bromberg et al. (2018), Ng and Kwok (2017), Stewart and Jürjens (2018); Gai et. al. (2018); Kang (2018); Lim et. al. (2019), Coloma (2020) and Mehrban et. al. (2020). but according to (Stulz, 2019) Though banks can replicate most of what FinTech firms can do, FinTech firms benefit from an uneven playing field in that they are less regulated than banks, although banks' responses to FinTech have also been hampered by their legacy IT systems and by internal frictions inherent in large diversified firms, FinTech's narrow

product offerings and lack of established "franchises" appear to put clear limits on Fintech's ability to displace banks; but BigTech firms have some advantages that banks will find it harder to replicate, and so they present a much stronger challenge to established banks in two main areas: consumer finance and loans to small firms.

FinTech Industry includes financial services developed by banks, insurance, non-bank, non-insurance and online firms & added many new terms such as BankTech, CoinTech and RegTech. FinTech provides a range of financial services with additional means of access. So FinTech clients have already become banking & non-banking institutions. (Gulamhuseinwala et. al., 2015)



Source: Author

Figure (2): FinTech Industry

The development of financial technology in the last twenty-five years was heavy. That let a FinTech as a word has gained prominence, the regulatory, operational and enforcement environment if would dramatically change. The regulation is focus on the opportunities and challenges with the FinTech innovations might present to financial institutions. the current economy has an interactive relationship between the financial economy & real economy and This is also an essential requirement for a smooth transmission of economy policy. In that respect, the financial institutions consider it vital to know FinTech's risks to economic structures and possibilities. The responsibility for the regulation extends beyond financial system monitoring, to safeguard the rights of society; the regulation should preserve economic balance and encourage also, mainly through its monetary policy, macro-economic stabilization.

Financial Supervision Authorities might have their own reasons to be immediately implicated in the evolution such a payment system. That could change the pursuit of financial supervision authorities in a very deep path.

In this part; the study doesn't explain Payments system; Crowdfunding, Crowd investing…e.g. the study focuses on Crypto currency and distributed ledger technologies (DLTs)

Crypto currency and distributed ledger technologies (DLTs) that support them have attracted significant attention across the world (Crosby et. al., 2016). Distributed ledger technology (DLT) has the bearing to distribution substantial benefits, both in financial services and other sectors (Guo and Liang, 2016; Collomb and Sok 2016; Fanning and Centers, 2016).

Crypto currency is one application of Block Chain, and whilst the Australia, Canada, Denmark, Japan, Switzerland, in addition to US, UK, Europe and many emerging markets has grown. The general trend of financial services companies is taking first steps into the market. On other side, those crypto currencies have growing evidence of harm to users, financial markets, economic activities and the international financial system. (Østbye, Peder.2019)

Crypto currency is based on distributed computing (King, 2013), unlike traditional currencies, often backed by gold and silver (Lerner, 1947). While traditional currencies are printed by central banks, distributed computer networks are creating or "mining" Crypto currency. It's a currency intended to function as an exchange medium. These types of currency use cryptography to secure and verify transactions and control a particular crypto currencies creation of new units. Crypto currencies are basically limited recording in a database that no one can commutation unless specific stipulations are met (Hileman and Michel, 2017).

Based on the above arguments, this study's test following hypothesis:

There isn't a significant difference in the attitudes of bankers about RegTech on the provision of FinTech services between public and private banks

Several studies indicate RegTech and cybersecurity was to obstacles to FinTech (Treleaven, 2015; Meager, 2017; Bromberg et. al., 2018; Ng and Kwok, 2017; Stewart and Jürjens, 2018; Gai et. al.,2018; Kang, 2018; Lim et. al.,2019; Coloma,2020 and Mehrban et. al., 2020. However, the Egyptian business environment has weakness in staff in addition to bank unit characteristics. That is agreeing with conclude of Boudreau and Robey (2005) that an integrated

technology with organization's operation was a “hard” constraint on human agency. According to Leonardi (2011) perceptions of constraint posh human to change their technologies while perceptions of affordance lead people to change their workstely; but the current study expects that this isn't easy for all human, as education and age have an effect on that. **Based on the above arguments, this study’s test following hypothesis:**

There isn't a significant impact of the staff characteristics on the provision of FinTech services for public and private banks.

Study Objectives

The main objective of the study is determining obstacles FinTech in public and private Egyptian banks.

Study Methodology

The study used the survey method to describe and analyze the obstacles FinTech in public and private Egyptian banks. The population of the study was Egyptian banker (Staff) from public and private bank units.

Data collection

The purpose of this study is to investigate obstacles FinTech in public (National Bank of Egypt - Banque Misr - The United Bank) and private (Commercial International Bank- QNB Alahli- Abu Dhabi Islamic Bank - Arab Bank - HSBC Egypt) Egyptian banks in Egypt. as reported in this study, were identified by reviewing prior literature on this issue, in addition to conducting interviews with stakeholders (bankers; Entrepreneurs and Clients) for the first stage

of the study (building the framework of the study). But in the second stage of this study (hypothesis test) used the questionnaire instrument; 436 questionnaires were sent for bankers, and 395 questionnaires were received, with a response rate of 90.6%. Table 1 summarizes the number of participants in the survey.

Table 1. Survey participants

No.	Bankers Type	Number	Weight
1	public	236	59.75%
2	private	159	40.25%
Total		**395**	**100%**

Note: The number of bankers and branches of public banks is more than the private banks

Source: Author, according to data collection

Results and discussion

Reliability statistics

The Cronbach's alpha coefficient of the received questionnaires was 0.9006. Thus, the study found indicators of stability of the statistical tests' results.

Descriptive statistics for acceptance of FinTech in Egyptian banks

According to Survey participants; the study has 395 questionnaires; where it included 236 from public banks compared to 159 from private banks; The statements from (1) to (6) which was the first dimension of the questionnaire; the (D1) was attitudes average of bankers about acceptance of FinTech in Egyptian banks; Following table presents data on acceptance of FinTech in Egyptian banks

Table 2. Descriptive statistics of acceptance of FinTech in Egyptian banks

No.	Statement	Mean	Std. deviation	Coefficient of variation
1	FinTech is an opportunity to develop a business in the bank	3.721518987	0.832961643	0.223823026
2	Bank's benefits can be achieved through FinTech	4.243037975	0.539477926	0.127144261
3	Bank can Minimize operating risks through FinTech	3.121518987	1.350095963	0.432512494
4	There are many suggestions for FinTech services at my bank	2.741772152	1.544320493	0.56325632
5	There was a call by the bank's management to offer proposed FinTech services	2.721518987	1.522560534	0.559452475
6	There are workshops on FinTech	1.903797468	1.080919311	0.567770117
D1	**acceptance of FinTech in Egyptian banks**	3.075527426	1.082206349	0.351877

Agreement rate= 100%-35.18% = 64.82%

Source: Author, according to Statistical Package for the Social Sciences output

According to Table above, the participants were in agreement regarding acceptance of FinTech in Egyptian bank units at the rate of 64.82%. The agreement was the highest statement for "Bank's benefits can be achieved through FinTech" but the lowest statement for "There are workshops on FinTech".

Descriptive statistics for regulations (RegTech) and FinTech

The statements from (7) to (9) which was the second dimension of the questionnaire; the (D2) was attitudes average of bankers about RegTech in Egyptian banks; the following table presents data of RegTech in Egyptian banks.

Table 3. Descriptive statistics of RegTech in Egyptian banks

No.	Statement	Mean	Std. deviation	Coefficient of variation
7	Financial technology regulations are unclear	3.989873418	1.044637617	0.261822
8	There is a lack of interest on the part of the Central Bank of Egypt in financial technology	2.250632911	0.596494288	0.265034
9	The regulations are multidimensional, which limits the presence of Egyptian FinTech	3.997468354	0.817010566	0.204382
D2	**RegTech in Egyptian banks**	3.412658228	0.355296076	0.104111

Agreement rate= 100%-10.41% = 89.59%

Source: Author, according to Statistical Package for the Social Sciences output

According to Table above, the participants were in agreement regarding importance of RegTech in Egyptian banks in Egyptian bank units at the rate of 89.59%. The agreement was the highest statement for "The regulations are multidimensional, which limits the presence of Egyptian FinTech" but the lowest statement for "There is a lack of interest on the part of the Central Bank of Egypt in financial technology ".

Descriptive statistics for Bank unit characteristics and FinTech

The statements from (10) to (12) which was the third dimension of the questionnaire; the (D3) was attitudes average of bankers about Egyptian Bank unit characteristics; the following table presents data of bank unit characteristics.

Table 4. Descriptive statistics of Bank unit characteristics

No.	Statement	Mean	Std. deviation	Coefficient of variation
10	Bank ownership pattern (public / private banks)	1.402531646	0.491029862	0.350103
11	There is acceptance by bank's clients for financial technology services	2.784810127	1.703019758	0.611539
12	The bank has a good infrastructure to provide financial technology services	3.663291139	1.282662326	0.350139
D2	**Bank unit characteristics**	3.224050633	1.435518901	0.445253

Agreement rate= 100%-44.52% = 55.48%

Source: Author, according to Statistical Package for the Social Sciences output

According to Table above, the participants were in agreement regarding importance of bank unit characteristics to appalled FinTech at the rate of 55,48%. The agreement was the highest statement for "Bank ownership pattern (public / private banks)" but the lowest statement for "There is acceptance by bank's clients for financial technology services ".

Test H_1: There isn't a significant difference in the attitudes of bankers about acceptance of FinTech between public and private banks

The study used an ANOVA test to analyze the acceptance of the application of FinTech between Egyptian public and private banks, and the test outputs are shown in the following table

Table 5. ***Acceptance of FinTech between public and private banks***

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
D1	Between Groups	370.699	1	370.699	1605.476	.000
	Within Groups	90.742	393	.231		
	Total	461.441	394			

Source: Author, according to Statistical Package for the Social Sciences output

The previous statistical results show (F) was 1605.476, which is significant at the level of 1%, so table (5) show a significant difference in acceptance of FinTech between public and private banks.

Low acceptance rate for public sector in comparison of private sector that is backing to some organizational restrictions and purchasing (tender) in public sector. Also, weak technological infrastructure in public sector may hinder applying such FinTech rather than private sector.

Also non effective top management policies and strategies in public sector rather than its counterpart (private sector), which leads to poor vision toward odds and novelties in market like adopting new technologies and mechanisms like FinTech, backing this to their fear of higher levels in the state and poor empowering or decentralization factor, whereas on contrast there is high levels of empowering and

centralization in private sectors to act boldly ahead with high risk taking levels to adopt new business technologies.

Now, the study rejects the Null hypothesis and accepts the following alternative hypothesis

There is a significant difference in the attitudes of bankers about acceptance of FinTech between public and private banks

Test H_2: There isn't a significant difference in the attitudes of bankers about RegTech on the provision of FinTech services between public and private banks

The study used an ANOVA test to analyze the regulations of FinTech between Egyptian public and private banks, and the test outputs are shown in the following table

Table 6. ***The regulations of FinTech between public and private banks***

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
D2	Between Groups	3.517	1	3.517	29.907	.000
	Within Groups	46.219	393	.118		
	Total	49.737	394			

Source: Author, according to Statistical Package for the Social Sciences output

The previous statistical results show (F) was 29.907, which is significant at the level of 1%, so table (6) show a significant difference in the impact of RegTech on the provision of FinTech services between public and private banks.

Some of obstacles may face firms to apply FinTech applications like License cost and Time to obtain license for processing, also complicated procedures and many papers required from the entrepreneurs to work on FinTech will hinder to process, especially young entrepreneurs (youth) who have low market experiences.

Now, the study rejects the Null hypothesis and accepts the following alternative hypothesis

There is a significant difference in the attitudes of bankers about RegTech on the provision of FinTech services between public and private banks.

Test H_3: There isn't a significant difference in the attitudes of bankers about characteristics of bank unit on the provision of FinTech services between public and private banks.

The study used an ANOVA test to analyze Bank unit characteristics between Egyptian public and private banks, and the test outputs are shown in the following table

Table 7. ***Bank unit characteristics between public and private banks***

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
D3	Between Groups	605.705	1	605.705	1154.333	.000
	Within Groups	206.216	393	.525		
	Total	811.922	394			

Source: Author, according to Statistical Package for the Social Sciences output.

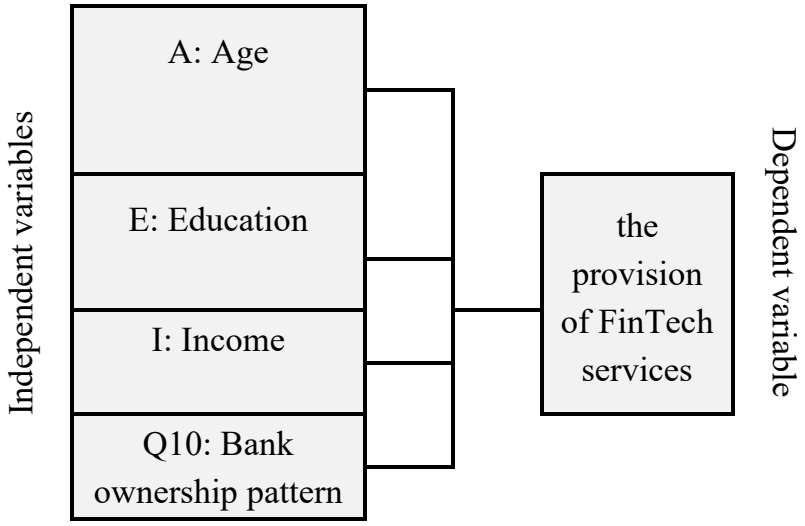
The previous statistical results show (F) was 1154.333, which is significant at the level of 1%, so table (6) show a significant difference in the impact of the bank unit characteristics on the provision of FinTech services between public and private banks.

Now, the study rejects the Null hypothesis and accepts the following alternative hypothesis

There is a significant difference in the attitudes of bankers about characteristics of bank unit on the provision of FinTech services between public and private banks.

Test H_4: There isn't a significant impact of the staff characteristics on the provision of FinTech services for public and private banks.

The study used a Regression analysis to exam the impact of the staff characteristics on the provision of FinTech services, Figure no. (3) Illustrates an Independent and dependent variables but the test outputs are shown in the table no. (8)



Source: Author

Figure (3): Independent and dependent variables

Table 8. *Regression analysis* output

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	440.668	4	110.167	2068.324	.000[a]
	Residual	20.773	390	5.326E-02		
	Total	461.441	394			

a. Predictors: (Constant), Q10, I, E, A

b. Dependent Variable: D1

Source: Author, according to Statistical Package for the Social Sciences output

The previous statistical results show (F) was 2068.324, which is significant at the level of 1%, so table (8) show a significant the impact of the staff characteristics on the provision of FinTech services for public and private banks as all.

Table 9. *T test* output

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.932	.187		10.317	.000
	A	-.471	.025	-.453	-18.548	.000
	E	.281	.020	.208	13.764	.000
	I	.474	.038	.234	12.486	.000
	Q10	.540	.051	.245	10.673	.000

a. Dependent Variable: D1

Source: Author, according to Statistical Package for the Social Sciences output

According to Table No. 9, the study finds a negative impact from the age group versus a positive impact with both income and the level of education; there is a significant impact of the staff characteristics on the provision of FinTech services for public and private banks.

Old employees (between 50-60 age), will find hardships to deal with technological recency or novelties like FinTech applications, because of many psychological factors like their feeling of near retirement case, and low productivity, as they always feel difficult to handle work operations and processes related to such new technology due to their old learning models and also due to their life styles or way of thinking, also resistance to change toward top management especially.

On contrast, young people (between 25-40 age) tend to accept such prominent changes especially technological actions, this due to the big gap level between their education levels and old people. Also, we will find higher acceptance and productivity toward top management and technology uses, which back to their life styles and time conditions.

Now, the study rejects the Null hypothesis and accepts the following alternative hypothesis

There is a significant impact of the staff characteristics on the provision of FinTech services for public and private banks.

CONCLUSION

The Egyptian economy witnessed several successive developments, which were reflected in the banking sector. As part of its role as a catalyst for change and supporter of the FinTech industry, the Central Bank of Egypt has launched its FinTech and innovation integrated strategy on March 2019 to promote Egypt's FinTech ecosystem and position Egypt as the regionally recognized FinTech hub. But the growth in FinTech services was not as expected. However; there is a significant difference in the acceptance of FinTech between public and private banks.

FinTech and BigTech firms have some advantages that banks will find it harder to replicate, the extent to which banks succeed in warding off such threats will depend on their ability to make effective use of the same information technology now being used by its new competitors, and their success in realizing economies of scale and scope that their nonbank competitors will find hard to match, this is consistent with Stulz (2019)

In essence we could conclude obstacles that face FinTech to spread as following:

The first dimension: Regulations (RegTech) There are a number of challenges confronting the development and adoption of FinTech services at bank sector. FinTech face a complex regulatory environment that was designed for older business models and is slow to adopt change. As fintech operate internationally, they must also contend with restrictions on where they can store and transmit data and with regulations designed to protect domestic incumbents. And the broader financial-services sector continues to face a number of evolving security threats, from data breaches to large-scale theft and fraud. (McQuinn et al.,2016)

The Second dimension: bank unit characteristics

a. **Bank ownership pattern**: Usually, private banks are more flexible in applying FinTech services, compared to public banks
b. **Clients Attitude**, Egyptian orientation towards using FinTech application is positive with reservation on the nature of each governorate, Cairo and Nile delta, Giza and Alexandria represent big weight for using such FinTech apps, Upper Egypt tend to lower using, lower Egypt and canal tend

to use such applications in hard times only, depending on one application from multi ones like money transfer.

c. **Technological Infrastructure**: Egyptian technological infrastructure is still weak to cover all country, like mobile networks and high speed internet. Especially in public banks compared to private banks.

The third dimension: Staff characteristics

a. **Age group**, the study found that the most influential effect for young staff as they are supporting FinTech, we can name them millennial especially. The rest of elders' staff doesn't have sound perception on FinTech.
b. **Income rates**, study observed that low rates of income for staff may hinder supporting FinTech. On the other hand, high rates of income provide wide spread for supporting FinTech.
c. **Education levels**, study found that segment who holds high level degrees or certificates from staff was supporting FinTech compared to those who don't have such education which still use cash as a trusted tool and have fears from using cards or internet to transfer money.

Recommendations

Egypt is highly ready to accept like FinTech apps, because the market is evolving and result of demand and supply forces as also the country is in its way for rapid inclusive transformation, so it is a positive factor to spread such FinTech apps, Therefore, the study suggests the following recommendations:

1. Egypt needs certain laws and restrictions to formulate a well-structured market. The development of regulatory restrictions plays a critical role in the prosperity of the banking sector in Egypt, it should find an operating framework that simultaneously enhances and enables banks to obey to the new set of regulatory restrictions under FinTech.
2. Banks have to take the gap between current technological infrastructures and desired technological to apply FinTech solutions According to RegTech, which could reach by focusing on cybersecurity and human skills improvements related to financial technology.
3. According regards to demographic factors, bank units have to classify and train its employees on financial technology trends by allocating budgets for workshops and session's centers to achieve integration between current case and the desired skills effectively.
4. Banks units have to consider difference in characteristics between each other's, to adopt processes and plans fit to every bank unit case, for applying FinTech solutions efficiently.
5. The study proposes the following action plan to reduce obstacles of FinTech in Egyptian bank units in six months:

Table 10. Action plan

No.	Mission	Method	Responsible	Expected period
1	Gain staff support	Discussion, meetings and workshops	Top management	Two months
2	Select new services from FinTech	Market research	Marketing Department	One month
3	Identify the technological gap in the infrastructure	Facility assessment and review	Information Technology Department	One month
4	Optimum technology selection	Available technology obtainable assessment and review	Top management + Marketing Department + Information Technology Department	One month
5	Staff training	workshops	Human Resources Department + Information Technology Department	One month

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معوقات التكنولوجيا المالية في قطاع البنوك في ظل التباعد الاجتماعي

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الملخص باللغة العربية:

تناولت الدراسة المعوقات التي تواجه تطبيق التكنولوجيا المالية (FinTech) بكل من البنوك العامة والخاصة. حيث تمثل مجتمع الدراسة في المصرفين المصرين، فقد بلغ عدد قوائم الاستقصاء التي تم جمعها ٣٩٥ قائمة (شملت ٨ بنوك مصرية) وذلك خلال النصف الأول من عام ٢٠٢٠، وقد خلصت الدراسة الى ان هناك اختلاف في مدى قبول التكنولوجيا المالية بين البنوك العامة والخاصة. وقد اظهرت الدراسة ان المعوقات التي تواجه تطبيق التكنولوجيا المالية في البنوك المصرية تتمثل في (١)" القواعد التنظيمية للتكنولوجيا المالية " RegTech حيث تواجه البنوك المصرية بيئة تنظيمية معقدة تم تصميمها طبقا لنماذج الأعمال التقليدية وتتسم بالبطء في تبني التغيير، (٢) "خصائص الوحدة المصرفية" فعادةً ما تكون البنوك الخاصة أكثر مرونة وقبولاً لتطبيق خدمات التكنولوجيا المالية بالمقارنة مع البنوك العامة؛ بجانب اتجاهات عملائهم نحو استخدام تطبيقات التكنولوجيا المالية FinTech وهنا من الاهمية الاشارة الى اثر النطاق الجغرافي فالقاهرة والجيزة والدلتا والإسكندرية تمثل الوزن النسبي الاكثر كثافة في استخدام تطبيقات التكنولوجيا المالية بالمقارنة بصعيد مصر، حيث لا تزال هناك البنية التكنولوجية ضعيفة خاصة في البنوك العامة مقارنة بالبنوك الخاصة. (٣) "خصائص العاملين" فوجدت الدراسة ان شباب المصرفيين الى جانب اصحاب الدخول الكبيرة بالإضافة الى اصحاب مستويات تعليم المرتفعة يدعمون تطبيق خدمات التكنولوجيا الماليةFinTech .

الكلمات الدالة:

التكنولوجيا المالية – تطبيقات التكنولوجيا المالية – القواعد التنظيمية للتكنولوجيا المالية – التباعد الاجتماعي.